Notes from Codes and Standards Stage 2 Subcommittee Meeting

May 4, 2016, 12:45 - 5:00pm

Location: Pacific Energy Center, San Francisco, and Energy Innovation Center, San Diego

Meeting Co-Chairs: Charlie Stephens, NEAA, Pat Eilert, Mary Anderson

Facilitator: Lara Ettenson (PEC) / Ted Pope (EIC)

Notes: Misti Bruceri & Associates, LLC

Click [here](http://www.caeecc.org/#!blank-34/dy5v9) for meeting documents

*Notes: Presentations are generally not summarized in these notes. Please see presentation slides on* [*www.CAEECC.org*](http://www.CAEECC.org) *website for context. Lack of attribution for meeting participant comments is intentional by agreement of Coordinating Committee.*

Welcome and Background – Lara Ettenson, Charlie Stephens

Facilitator helps CC Co-chair

• Purpose of Coordinating Committee – overview of process

• Purpose of Subcommittee Meetings: deal with more technical topics including program design-related issues and strategy to help CC move forward with process

• Role of Subcommittee Participants

• 4 Stage Process

• Ground Rules

• Introductions around the room

Written comments on the proposed C&S business plans are due by May 25th. Instructions on the CAEECC web site.

Session 1: PA Stage 2 Presentations

BayREN – presented by Jerry Lahr, Christopher Bradt

*See slides.*

*Questions and Comments: Brief questions during resolution of technical difficulty. Remaining questions deferred until after presentations*

**Question:** Is the savings shown for new construction, retrofits, or both?

**Response:** The savings is from the Navigant study, and includes all sectors, new construction and retrofits for both residential and nonresidential.

**Question:** I really like the regional plan check idea, and also doing more testing of the CodeCycle product, which don't overlap with any other activities. My question is regarding your proposed advocacy work. Are you going to do CASE studies? Also, how will you deal with the situation if it turns out that you have a different opinion then rest of SW program?

**Response:** We will only work on Title 24, and aren’t planning any Title 20 work. Our objective is to figure out how to amplify the building departments’ (BD) voice within the process. There is a letter from CALBO that we need to get permission to share, that summarizes some of their concerns. Many BD employees have been implementing the code for a long time. We’d like to work with the statewide team in the 2019 process to inform the development of the code before it’s fully baked (or even half-baked). BDs can lend their boots-on-the-ground experience implementing the code. They are often the last to hear about changes they are responsible to implement.

SW IOUs:

Overview presented by Pat Eilert, PG&E

Planning and Coordination presented by Randall Higa, SCE

Building Codes Advocacy presented by Marshall Hunt, PG&E

Reach Codes presented by Javier Mariscal, SCE

Appliance Standards Advocacy presented by Charles Kim, SCE

Compliance Improvement presented by Jill Marver

*See slides.*

*Questions and Comments: Questions deferred until after presentations*

PG&E – presented by Pat Eilert

*See slides.*

*Questions and Comments: Questions deferred until after presentations*

SDG&E – presented by Adrian Salas

*See slides.*

*Questions and Comments: Questions deferred until after presentations*

Facilitator Comments to Start Discussion:

I am a systems engineer, and have developed a model showing the relationship between the human economy and the earth. There are solutions to the question regarding how to make the wedges in Pat’s presentation wider. Agriculture is a significant opportunity that could account for nearly half the remaining reductions. The second part of the solution is making stuff last longer. If we did this, it would take care of most of the rest of the remaining wedge.

In 1996, I heard of a new technology for pavement that saves energy. The conclusion of the analysis was that it would save 45 quads, and $2.5 trillion, yet there were only two projects done.

I discovered the technology had two fatal flaws: the first was the design life of fifty years. The industry liked seven or eight much better as much of the revenue was based on the need to re-do the work periodically. The second was a cost barrier; the product cost 30% less than conventional products.

Just a reminder that barriers not necessarily what we think they are, and that many industries depend on inefficiency for the success of their business. For example, DR efforts focused on electric water heaters are predicated on gross inefficiencies of older units.

Another thing from systems engineering is to remember that everything else isn't holding still while you are busy working on your piece. In the northwest, we have a “whole buildings” project that side steps federal preemption because it isn’t federally regulated yet.

The issue of too much complication is similar. Remember market barriers. Someone's livelihood depends on the complexity. We need to approach simplification from a systems perspective. California is lucky in that it has the policy tools to deal with climate change.

**Question:** We have an advanced tool that takes the complex code and makes it simpler for designers, inspectors. We did a pilot and everyone likes it. We have tried to partner with the IOUs and it has gone nowhere. What we are doing looks to the IOUs to do enforcement, which is a line they won't cross. Our product tells inspectors to check in a specific room for specific equipment. What is the line? Where does compliance assistance end, and where does enforcement begin?

**Response:** These kinds of overarching policy issues can be addressed in a section of the business plans. Some have been around for some time; some will come from the CC process.

**Response:** It is a company policy, not a CPUC policy.

**Response:** We have worked with you and others on our best practices project. We work closely with the CEC to plan our activities based on their priorities. I have a recent example of a similar situation we encountered. The CEC just asked us to support them on the new repository, but we can’t touch the data side of the system as we can’t take on the responsibility for it so we can only go so far.

We have received several ideas of other tools, as a matter of fact, I was approached by someone yesterday. There are a lot of great ideas out there, but since ratepayers fund what we do, we can’t fund things that are proprietary. Also, we would have to do a competitive bid.

**Facilitator** intervened to advise that we need to re-focus discussion away from individual vendor products as that could put the vendor at risk down the road. We need to keep the discussion within the Business Plan framework, which would include electronic tools for compliance improvement generally. CPUC preparing guidelines regarding conflicts of interest, but we need to keep the discussion at a high level.

With respect to the application of policies, NRDC once requested the IOUs provide a person to work at local governments and the CPUC said no because then they would be responsible for the work they do.

Asking the general question “Where is the line between compliance and enforcement?” is in bounds.

**Question:** This question is about Reach Codes. You mentioned that some cities doing PV only? Are the C&S programs coordinating with other activities like the distributed resources process? Issues like identifying the optimal amount of solar contribution to the grid may be relevant to that work.

**Response:** Bandwidth permitting, we would love to participate. We are already having problems with compliance and resource constraints. When cities move forward on their own, we sometimes don't know about it until after the fact.

**Facilitator:** This has come up in almost every meeting. There are so many things going on. It could be in the overarching section of the BP report from the CC. This process is actually ahead of the others though, so they cannot coordinate directly yet.

**Question:** It would be good if compliance improvement was a resource program. What are the impediments? Can they be overcome?

**Response:** C&S work is very complex and it’s hard to pull apart, which is the reason compliance is an input into the equation for the Advocacy evaluation. It’s hard to pull out who is responsible for each piece. Cost of the evaluation is greater than the value of the incremental savings. In short, it is complex and costly.

**Facilitator:** Agree that it should be valued, since the IOUs get credit based on the percent compliance. If increase compliance, it would provide savings later. Could there be a double counting issue?

**Response:** I don't think it’s a problem. We have never had the compliance percentage updated. It’s a very conservative estimate. The evaluation is done soon after code changes and there are natural increases in compliance over time.

**Response:** In the NW, we don't count the savings for attribution, but do for analyzing the impact on the system. Attribution is a much bigger problem.

**Question:** Of all the C& S sub-programs, the only ones that receive savings are Building and Appliance Advocacy?

**Response:** Yes, correct. Reach Codes could be a resource program, but there is no savings claimed, in part because of reporting challenges. We are thinking of it as a strategic initiative now.

**Response:** Attribution is the exact reason we don’t claim savings for compliance improvement. Like free ridership, it is very difficult to determine who and how much each factor contributed to the change. CPUC evaluators consolidated the savings calculations under the components that are the easiest to measure. We are working with CPUC to show how incentive programs contribute to compliance. We haven't analyzed how previous compliance supports future compliance, but realize that analysis would have a large price tag. It would have to be worked out with the CPUC. Likely massive costs, with relatively fewer benefits.

**Question:** All answers revolve around assumptions based on current compliance processes. Advanced compliance tools would allow you to manage data for some buildings but not others, and you would then be able to get comparative data. There are a lot of factors, you are assuming the cost for doing measurement is high. With data-driven technology solutions, you could apply RCT. There are people such as UC Berkeley that are interested in applying it to efficiency.

**Response:** For reach codes, we are not pursuing as a resource program. We are considering the tracking tool and a tool for cities, to support Climate Action Plans (CAP). It may be possible to do a test run as Chris said, similar to a reach code. But even the cool roof code requires changing the permit process in order to model the savings. The BD would have to gather additional data, so it does have a domino effect.

**Facilitator:** US DOE recently did a code compliance study. First, they had to define what “compliance” means. They decided that it does not mean the project complied with every single measure in the code. The based it on energy savings, and found that most buildings exceeded code. The code did its job. There is a broad range of definitions.

**Question/Comment.**  As a contractor in the past, I admit that I did not always pull permit, but I still thought that I was doing it right. For a lot of items, the code provides a clear guideline that impacts industry practice. We introduced acceptance tests to the code in 2005 with the idea of documenting that the measure functions as intended. However, that system is now broken. It was designed to be conducted by installing technician. Since then, a huge certification process was layered on top of that that requires three years of experience also, which is creating barriers. The short answer is that a lot of things aren't captured by compliance documentation.

**Response:** We spend two percent of the budget to achieve 70 percent of the goals. Some people look at that and question if it really optimized? Will things be restructured to get more cost-effective savings?

However, the market transformation actually occurs in incentive programs as it is supposed to do. The problem with current policies is if the programs do their job right, and the measure gets into code, they get punished because the baseline is reset. It is a structural problem, but the code needs the programs. They do the heavy lifting to get to code. We are striving to integrate C&S more on a portfolio basis.

**No questions from EIC.**

From Telephone:

**Question:** There is a chart comparing the C&S program budget and impacts vs incentive programs. Do you have that same chart comparing multifamily to single family incentives?

**Response:** No, we don’t have that at hand, but could produce it.

**Response:** The standards apply to both single family and multifamily at the same time. It may be difficult to separate them.

**Response:** Several talked about the code being too complex, and the fast turnover. Development for the 2019 cycle is starting now. If you want to be involved, now is the time. There is a new manager at the CEC who wants to address issue of code complexity. He wants to see problem-solving approaches. Be very specific with a potential solution. He is open to a different type of discussion than in the past.

**Response:** We are currently working with the implementation office…Chris Olvera’s team. We get a lot of feedback thru the Energy Code Ace web site and from our trainings. Also the CIAG, which includes different industry representatives, and CEC, and CPUC has produced about 15 white papers documenting some of the issues. We are acting upon six or seven of them, BayREN also.

**Response:** In our Stage 1 presentation, we showed that compliance for most projects is very high, which keeps things in perspective, and also goes into the calculus for prioritizing our work. It's how we decide to take on different projects, rather than evaluating a single tool.

**Question:** With respect to compliance rates, I have been talking with CPUC to find out how the compliance evaluation is done. I believe there is a significant error in the study, and the savings is too high.

**Response**: That would be good to understand at a deeper level. Getting to the bottom of these issues is complex, which is why the evaluators moved to modeling the whole building. If you think the evaluation is wrong, let's see some data.

**Response:** We used to have a term “Extension of Advocacy” which was used to describe compliance improvement for measures adopted that were sponsored by utilities. Part of the savings model includes compliance, and to that extent, compliance improvement activities can be considered part of a resource program. But, the evaluators don't look at what caused the change in compliance. We still try to increase it for a higher rate, but the evaluators don't look at attribution at all. Separately measuring compliance improvement for measures not promoted by the utilities was also complex because of the need to establish a baseline against which to compare, then parsing out all the factors that caused the change.

**Question:** There are several reasons for the low compliance rate in CA. One cited earlier is the number of changes to the energy code vs other areas of the building code. The fact is that in other sections of the ICC there are typically as many pages that change as not. The Title 24 process is different than IECC process. IECC is a voting process dominated by industry; it isn’t data-driven. In CA, our process is data driven. We often hear Part 6 is too complex, and more so than other Parts. That is only true in a particular way. Similar to the structural code, it is extremely complex, but if you follow a prescriptive path, it is deemed to comply.

**Response:** The actual code can be pretty complex, but it can be provided as more easily digestible by users.

**Facilitator:** Please submit any written comments related to Business Plan presentations presented today using the process described on the CAEECC web site. Note items you think could or should be improved, added, or eliminated.